

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

DOCUMENT MANAGEMENT SYSTEMS  
LLC,

Plaintiff,

v.

ALEXA INTERNET, INC.;  
DOW JONES & COMPANY, INC.;  
ELSEVIER B.V.;  
GOOGLE INC.;  
IAC/INTERACTIVECORP;  
LEXISNEXIS;  
LYCOS INC.;  
THOMSON REUTERS CORPORATION;  
WEBMD, LLC;  
YAHOO! INC.;

Defendants.

C.A. No: 1:11-cv-332-SS

JURY TRIAL DEMANDED

**PLAINTIFF'S OPENING CLAIM CONSTRUCTION BRIEF**

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To the Honorable Court:

Plaintiff DMS Corporation (“DMS”) hereby files its initial brief in support of its proposed construction of disputed claim terms in the patent at issue in this case. Construction of terms in patent claims is a question of law for the Court. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 387–91 (1996). This brief provides DMS’s contentions as to how the disputed claim terms should be construed.

## **I. INTRODUCTION**

The technology at issue in this case is online database search technology. DMS is a pure IP firm that focuses on licensing technology in the overall area of online search. The Defendants in this case all provide some form of online search technology. At issue in this litigation is U.S. patent no. 5,634,051 (‘the ‘051 patent’), which is concerned with online search technology. Both the ‘051 patent and its prosecution history are attached to this paper as respectively Exhibits A and B. DMS is an exclusive licensee with standing to enforce the ‘051 patent. DMS has asserted infringement of claims 1, 10, 14, 17, 18, and 22 of the ‘051 patent.

## **II. BACKGROUND**

### **A. Background of the Technology**

Online information retrieval systems at the time the subject invention was made were utilized for searching and retrieving many kinds of information. Most of such systems worked in essentially the same manner. A user would log on, through a computer terminal or personal computer, for example, select a particular database of information, that is, typically searching only a small portion of an entire search domain, and formulate a query. A user would then

launch a search and review the search results, typically with documents or summaries of documents displayed in reverse chronological order. This process would have to be repeated each time a user wanted to search another database or group of databases. The process would have to be repeated frequently to insure all relevant documents were found, with the user again having to launch the same query with every change in databases. The process also burdened the user with organizing and assimilating the multiple results generated from the launch of the same query in each of the multiple databases that the user wanted to search.

**B. DMS's Patent-In-Suit: U.S. Patent No. 5,634,051**

The patent discloses an information storage, searching and retrieval system for a large domain of archived data of various types, in which the results of a search are organized into discrete types of documents and groups of document types so that users may easily identify relevant information more efficiently and more conveniently than in prior art systems. Claim 1 is a useful representation of the overall scope of the inventions claimed in the '051 patent:

1. An information storage, searching and retrieval system for large domain archived data of various types comprising:
  - means for storing a large domain of data contained in multiple source records, at least some of the source records being comprised of individual documents of multiple document types;
  - means for searching at least a substantial portion of such data based on a search query to identify documents of multiple types responsive to the query; and
  - means for categorizing documents responsive to the query based on document type, including means for generating a summary of the number of documents responsive to the query which fall within various predetermined categories of document types.

### **III. SUMMARY OF THE PRESENT DISPUTE**

The parties presently dispute the meanings of eleven claim terms, but three means-plus-function claim terms are particularly important because they potentially raise issues, not only of claim construction, but also of validity. The three disputed means-plus-function terms are “means for storing,” “means for searching,” and “means for categorizing.” The Defendants’ contend that there is insufficient supportive structure disclosed in the specification for any of these terms – and that claims reciting these terms are too indefinite to be construed. Claims with terms too indefinite to be construed would be invalid. The Defendants’ Expert Report from Dr. Larson, a copy of which is attached to this paper as Exhibit F, focused in particular on “means for categorizing.” In fact, “means for categorizing” along with its component “means for generating a summary” is the only claim term discussed in Dr. Larson’s Report. Moreover, Dr. Larson offers in his Report no construction for any other claim term whatsoever. DMS contends in response that, as shown in detail below in this paper, there is ample support in the specification for the disputed means-plus-function terms.

### **IV. APPLICABLE LAW**

#### **A. General Principles Of Claim Construction**

Claim terms “are generally given their ordinary and customary meaning,” i.e., “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). This meaning is determined “by looking first at intrinsic evidence such as surrounding claim language, the specification, the prosecution history, and also at extrinsic evidence, which may



include expert testimony and dictionaries.” *L.B. Plastics, Inc. v. Amerimax Home Prods., Inc.*, 499 F.3d 1303, 1308 (Fed. Cir. 2007).

The specification in particular is “highly relevant.” *Phillips*, 415 F.3d at 1315. “Usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed term.” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.” *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004).

The prosecution history, although less significant than the specification, also plays an important role in claim construction analysis. *Phillips*, 415 F.3d at 1317. “Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” *Id.* Prosecution history also has the advantage of having been “created by the patentee in attempting to explain and obtain the patent.” *Id.*

Extrinsic evidence—such as dictionaries, learned treatises, and expert and inventor testimony—“can shed useful light on the relevant art,” but is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Id.* (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)). Courts may consider extrinsic evidence so long as they give due consideration to the limits on its usefulness and to the primacy of the intrinsic record. *Id.* at 1317–19.

## **B. Construction of Means-Plus-Function Elements**

Claim elements may be expressed in a patent functionally as a means for performing a specific function, so called “means-plus-function” claims. 35 U.S.C. § 112, ¶ 6. Means-plus-function terms are construed to cover only the corresponding structure described in the specification and its equivalents. *Id.*

Construction of a means-plus-function term entails two steps. First, the claimed function must be identified, staying true to the claim language and its functional limitation as expressly stated in the claim. *See, e.g., Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006); *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1322 (Fed. Cir. 2003). Second, the court must identify the structure in the written description that corresponds to the properly construed functional language. *Applied Med. Res.*, 448 F.3d at 1332; *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2005). The corresponding structure disclosed in the specification need not include everything necessary to enable the claimed invention to work; instead, it need include only the structure necessary to perform the recited function. *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1119 (Fed. Cir. 2002).

## **C. Means-Plus-Function Elements With Computer Structure**

In a means-plus-function claim in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm. *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349. (Fed. Cir. 1999). That is, when a means-plus-function limitation is “computer-implemented,” the corresponding

structure for the recited function is the algorithm disclosed in the specification for performing the recited function and its equivalents. *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008); *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249, 1253 (Fed. Cir. 2005). No precise form is required for disclosing the algorithm. Precedent and practice permit a patentee to express that procedural algorithm “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Typhoon Touch Technologies Inc. v. Dell Inc.*, 659 F.3d 1376, 1385 (Fed. Cir. 2011), citing with approval *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed.Cir.2008). The amount of detail that must be included in the specification depends on the subject matter that is described and its role in the invention as a whole, in view of the existing knowledge in the field of the invention. *Typhoon Touch* at 1385.

## V. CONSTRUCTION OF DISPUTED CLAIM TERMS

There are essentially eleven claim construction disputes that DMS requests this Court address, all concerning the claims of the ‘051 patent:

- A. “means for categorizing documents responsive to the query ..., including means for generating a summary of the number of documents responsive to the query...” as found in claims 1, 10, 14, 22
- B. “means for storing a large domain of data” as found in claims 1, 10, 14, 22 – in a somewhat varied form in claim 10, addressing document types rather than source records

- C. “means for searching [substantial] portion” as found in claims 1, 10, 14, 22 – “at least a substantial portion” in claims 1, 14, 22 – “at least a portion” in claim 10
- D. “document type” as found in claims 1, 10, 14, 17, 18, 22
- E. “at least a portion” as found in claims 10, 17, 18
- F. “at least a substantial portion” as found in claims 1, 14, 22
- G. “document” as found in claims 1, 10, 14, 17, 18, 22
- H. “summary of the number of documents responsive to the query” as found in somewhat varied forms in claims 1, 10, 14, 17, 18, 22
- I. “source record” as found in claims 1, 14, 17, 18, 22
- J. “presenting” as found in claims 17, 18
- K. “generating an electronically executable query” as found in claims 17, 18

The Joint Claim Construction Statement, attached to this paper as Exhibit C, actually lists thirteen disputed claim terms, but DMS hereby resolves two of those disputes. The Joint Claim Construction Statement, at the bottom of page 3, lists “sets of categories of document types” as a disputed claim term for which the Defendants proposed no construction and DMS listed a proposed construction. Upon further reflection, DMS agrees with the Defendants that “sets of categories of document types” needs no construction.

The Joint Claim Construction Statement, near the top of page 5, lists “categories of document types” as a disputed claim term for which the Defendants proposed the construction “collections of one or more document types” and DMS listed an alternative construction. Upon further reflection, DMS agrees with the Defendants that “categories of document types” is properly construed as “collections of one or more document types.”

**A. “means for categorizing”**

The phrase “means for categorizing” is disputed as it is found in claims 1, 10, 14, and 22.

The phrase occurs in slightly different contexts among the subject claims. Claims 1 and 10 recite:

means for categorizing documents responsive to the query based on document type, including means for generating a summary of the number of documents responsive to the query which fall within various predetermined categories of document types

Claim 14 recites:

means for categorizing documents responsive to the query based on document type and independently of the source record from which such documents were obtained, including means for generating a summary of the number of documents responsive to the query which fall within each of the document types.

And claim 22 recites:

means for categorizing documents responsive to the query based on document type, including a plurality of predetermined sets of categories of document types, at least one of the categories in at least one of the sets corresponding to more than one document type, and means for generating a summary of the number of documents responsive to the query which fall within the various categories of one of such predetermined sets of categories.

The subject claims are agreed to be means-plus-function claims, and their recited functions are agreed as shown on page 2 of the Joint Claim Construction Statement. DMS contends that “means for generating a summary” is best understood as a component of “means for categorizing. Claims 1, 10, and 14 expressly state that means for generating a summary is included within means for categorizing documents. DMS believes that claim 22 also ought to be read with “means for generating” as a component of “means for categorizing.” As such, with reference to page 2 of the Joint Claim Construction Statement, DMS submits that the agreed

function descriptions of “means for categorizing” should be read as follows. For claims 1 and 10:

Categorizing documents responsive to the query based on document type [including] generating a summary of the number of documents responsive to the query which fall within various predetermined categories of document types

For claim 14:

Categorizing documents responsive to the query based on document type [including] generating a summary of the number of documents responsive to the query which fall within each of the document types

And for claim 22:

Categorizing documents responsive to the query based on document type [including] generating a summary of the number of documents responsive to the query which fall within various categories of one of such predetermined sets of categories

The parties disagree regarding the corresponding structure disclosed in the specification for “means for categorizing,” including “means for generating.” As indicated above under Applicable Law, when disclosed structure is a computer or processor programmed according to an algorithm, the corresponding structure is the algorithm. The Defendants contend that a general purpose computer is the only corresponding structure, that the specification fails to include sufficient algorithm for performing the claimed function beyond the language of the claims themselves, and that therefore this term is indefinite, not possible to construe. DMS contends that there is sufficient supportive algorithm disclosed in the specification to support proper construction of “means for categorizing.” DMS notes that both Declaration Of Joe Tipton Cole In Support Of Plaintiff’s Proposed Claim Constructions and its Exhibit 4 as well as the Rebuttal Claim Construction Report Of Tipton Cole, respectively attached as Exhibits D, E, and

G, provide foundation and support for DMS's contentions regarding algorithmic support for this claim element – as well as the other claim elements discussed below in this paper.

Regarding “means for categorizing,” the specification discloses at column 4, lines 45-60:

... The SAS system 24 **broadcasts** the user's search to the complex of search machines. It **waits** for a signal from a machine in each column in the complex to insure that the entire domain will be searched. If **after an appropriate time** a machine in one or more columns **has not responded** that it has accepted the query and queued it for processing, the SAS 24 will **inform the user** that the search will not be completed across the entire domain and **ask if the user wishes to continue**. This typically would occur only if multiple search engines are not operational.

**If all columns respond or the user indicates that the partial search is acceptable** then the SAS 24 **waits** on each column that accepted the query to begin to report its results to it. As these results are received each document returned is **identified by document type** and **assigned to a particular category** in a predetermined set of categories. ...

Emphasis added. The algorithmic structure for categorizing documents according to document type as disclosed in the specification at column 4, lines 45-60, is illustrated here in Figure 1 in form of a flow chart:

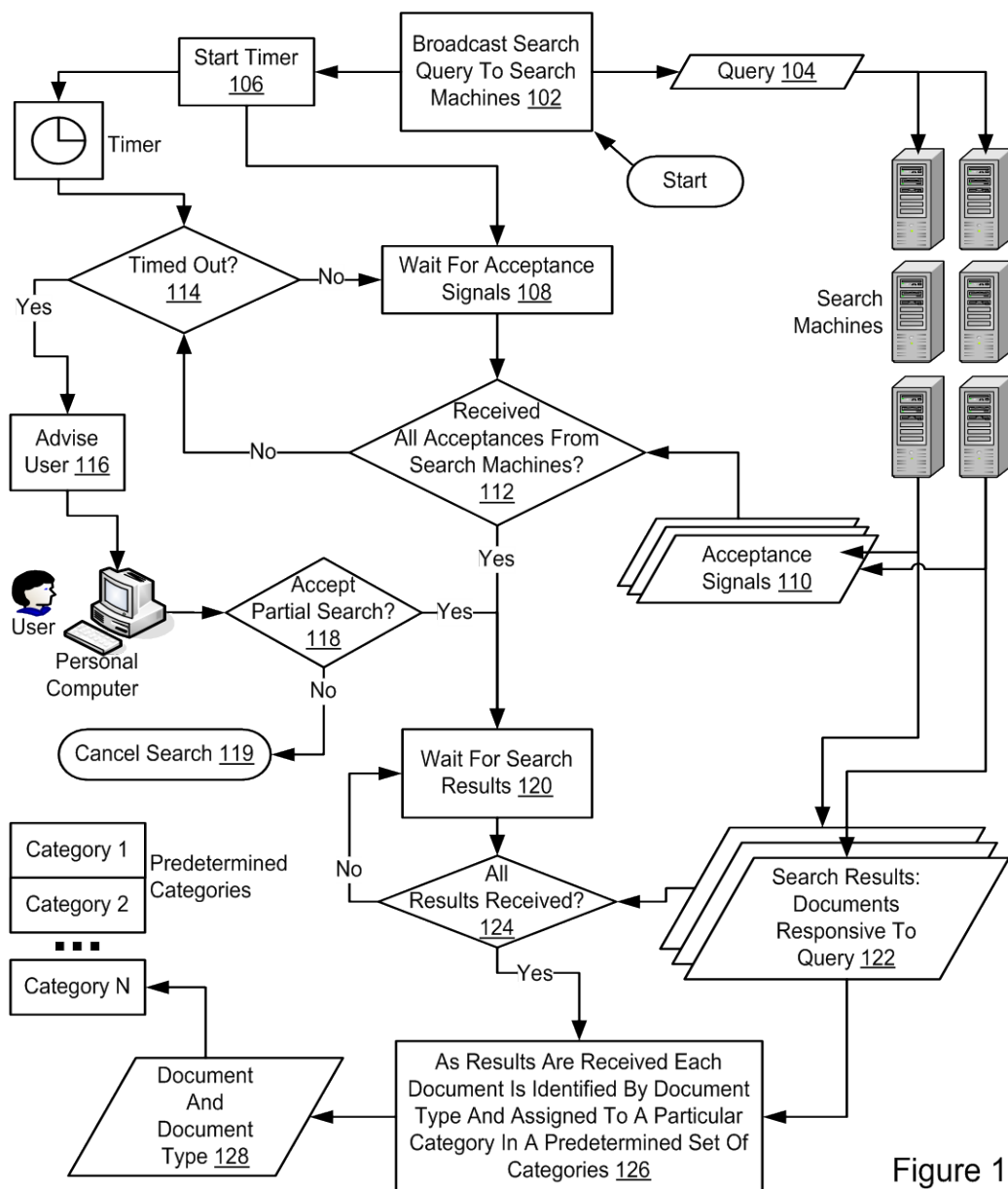


Figure 1

The form of flow chart in Figure 1 above is adapted from the flow chart presented by DMS's expert Tipton Cole at page 13 of his Rebuttal Claim Construction Report. DMS contends that all the algorithmic structure illustrated in the flow chart of Figure 1 is expressly set forth in the specification of the '051 patent, column 5, lines 45-60, not implicit, not inferred on the basis



of skill in the art. And all of it is clearly linked to means for categorizing including means for generating a summary because the algorithmic structure illustrated in the flow chart of Figure 1 directly provides the search results that are categorized and summarized.

Further regarding “means for categorizing,” the specification further discloses at column 5, lines 13-23:

**When all results are reported** (i.e. all columns have indicated they are finished), the SAS 24 organizes the documents into the above-described **categories** and in the correct order for display, **utilizing a predetermined key** (such as the date of the publication, the publisher, and/or alphabetical priority of the document, etc.) that is **generated** for each document when it is **loaded** into the **database**. Display of the information to the user is usually in reverse chronological by date published but can be based on any content of the document, as desired. Once the sorting is complete, search results are **presented by category to the user**.

Emphasis added. The algorithmic structure for categorizing documents on document type as disclosed in the specification at column 5, lines 13-23, is illustrated here in Figure 2 – again in the form of a flow chart adapted from the flow chart presented by Tipton Cole at page 14 of his Claim Construction Rebuttal Report:

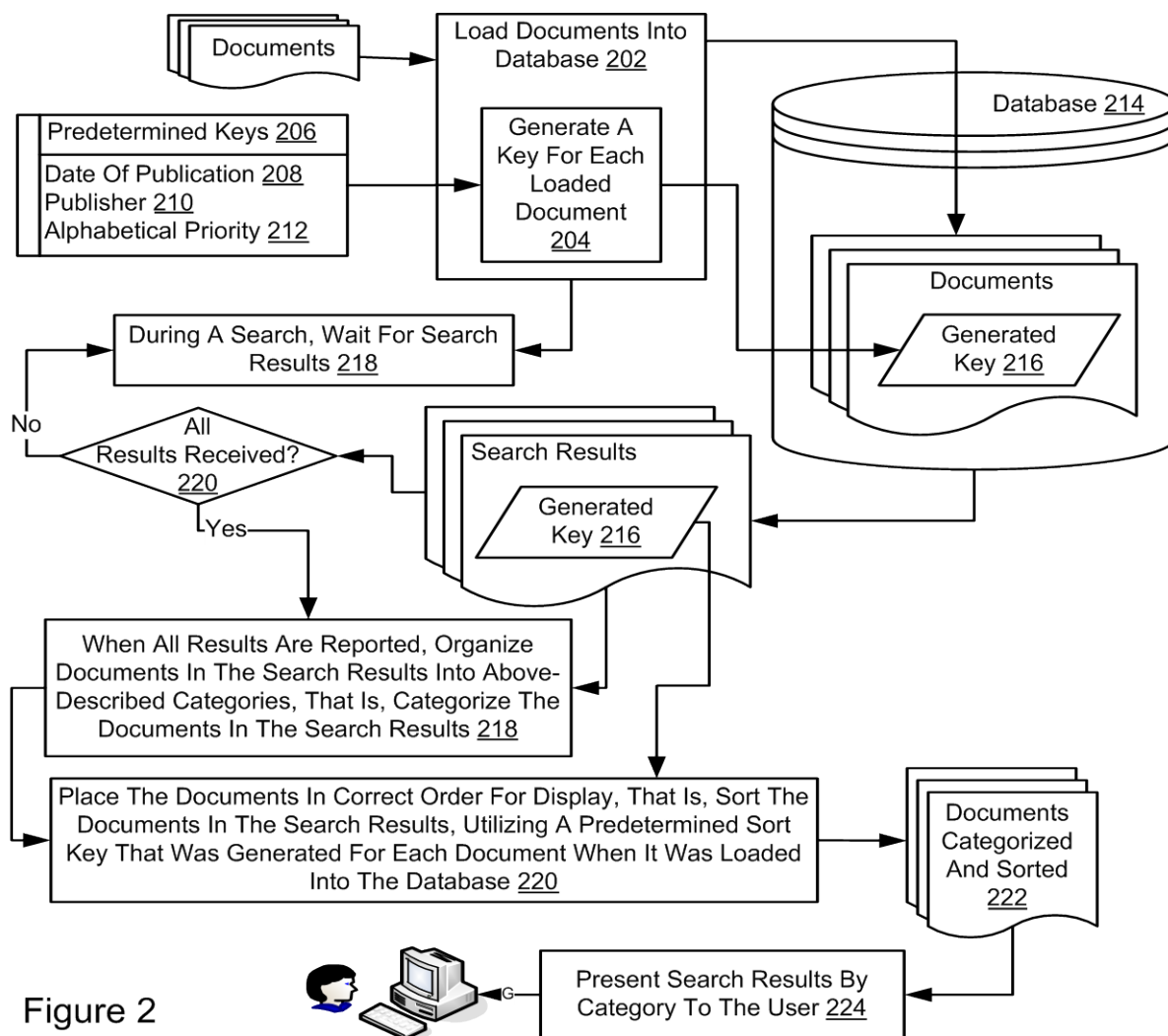


Figure 2

Again, all the algorithmic structure illustrated in the flow chart Figure 2 is expressly set forth in the specification of the '051 patent, column 5, lines 13-23, not implicit, not inferred on the basis of skill in the art. And all of it is clearly linked to means for categorizing including means for generating a summary because the structure, including the predetermined keys and the generated keys, are the structure utilized directly to categorize search results and generate a summary of the number of documents in a search result.

The specification discloses at column 8, line 58–column 9, line 13, further algorithmic structure in support of categorizing by document type:

FIG. 5 illustrates how five typical sources of information (i.e., source records) can be **sorted into many document types** and then **subsequently into categories**. For example, a typical trade magazine may contain several types of information such as editorials, regular columns, feature articles, news, product announcements, and a calendar of events. Thus, the trade magazine (i.e., the source record) may be **sorted into these various document types**, and these document types in turn may be **categorized or grouped into categories** contained in one or more sets of categories; each document type typically will be **sorted into one category within a set of categories**, but the individual categories **within each set will vary from one set to another**. For example, **one set of categories** may be established for a **first characteristic type of user**, and a **different set of categories** may be established for a **second characteristic type of user**. **When a user corresponding to type #1 executes a search, the system automatically utilizes the categories of set #1**, corresponding to that particular type of user, in organizing the results of the search for review by the user. **When a user from type #2 executes a search, however, the system automatically utilizes the categories of set #2** in presenting the search results to the user.

Emphasis added. The algorithmic structure for categorizing documents on document type as disclosed in the specification at column 8, line 58–column 9, line 13, is illustrated just below in Figure 3 – once again in the form of a flow chart rather than bullet points, again a flow chart adapted from a flow chart presented by Tipton Cole at page 16 of his Claim Construction Rebuttal Report:

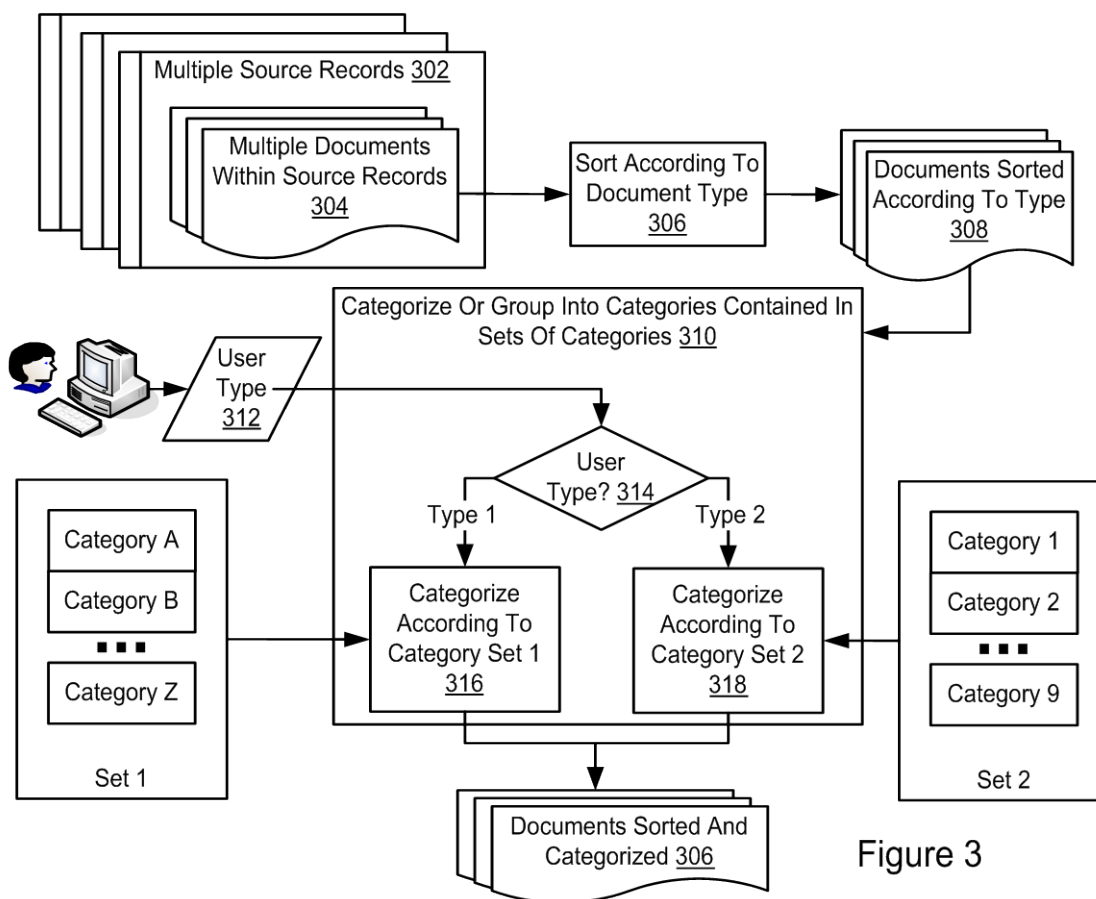


Figure 3

Again, all the algorithmic structure illustrated in the flow chart of Figure 3 is expressly set forth in the specification of the '051 patent, column 8, line 58–column 9, line 13, not implicit, not inferred on the basis of skill in the art. And all of it is clearly linked to means for categorizing including means for generating a summary because the structure, including the multiple source records, multiple document types within source records, the user types, and the sets of categories, represent algorithmic structure utilized directly to categorize search results.

Continuing its description of the operation and structure of the example depicted in FIG. 5 of the '051 patent, the specification discloses at column 9, lines 13-67:

Turning again, then to the trade magazine example, when the magazine is **loaded** into the system, a text analysis process **identifies** each unique **document type** within the magazine with a **code** and this **code** is **utilized** by the system, **in conjunction with the predetermined sets of**

categories, to organize search results by document types into categories at the end of each search. (An alternative to marking individual document types with document type codes is to **sort them into categories at the time they are loaded** into the system and then search the individual categories; however, this may require documents to be stored more than once in the domain in order to customize categories for different types of users.) **If the user corresponds to category #1 (see FIG. 5), then** the number of documents responsive to the search query that fall into the categories of "product specifications," "manufacturer supplied descriptions," "product announcements," and "trade show information" are all summarized separately. On the other hand, **if the user corresponds to category #2, then** all of the documents responsive to the search query that fall within these categories are lumped together in the category "Product Information" in categories set #2. Thus, **the same query** launched by two users corresponding to different categories will **yield the same answer set**, but the answer set will be **summarized differently for the two individuals**, each being tailored to their particular needs. This customization of the summary of the search results facilitates review of the search results, saving time for the user and reporting the results in a manner that is uniquely relevant to him or her.

The **sets of categories** utilized by the system may be **based upon any relevant criteria** relating to the types of users who will utilize the system. For example, the sets of categories may be based upon **the professional class of the user--i.e., legal, business, technical, etc.** Within such broad classes further distinctions could be made; for example, **technical users could be further identified by technical discipline** (such as chemical, electrical, mechanical, medical, etc.). Alternately, users could be **identified by industry**, with or without regard to professional class or technical discipline (such as lumber, medicine, glass manufacturing, etc.). **Other possible methods for determining sets of categories** could include **geographical location** of the user, **the company the user works for**, **terminology most familiar to the user**, or any other relevant user characteristic. Also, in some cases **categories with identical content could be given different names**, again depending on the terminology most familiar or useful to the user. Alternately, if desired, the **user may be permitted to select** which of several sets of categories should be used by the system in reporting results, and, if desired, **which categories of document types will be utilized in a particular selected category set** (i.e., the user may be able to **customize** not only **which category set** will be used, but will be able to **customize** which **document types will be lumped together in a particular category** and/or **what name will be given to such a customized category** containing multiple document types).

Emphasis added. In view of this excerpt, the structure disclosed at column 9, line 14–column 9, line 67, directly supporting the function of categorizing documents according to document type includes at least the following algorithmic structure, steps, or processes:

- identifying at load time, for example by text analysis, each unique document type in a source record (here a magazine)
- Also at load time, associate each document so typed with a document type code and store that code with the document in the database
- At search time, organize search results by document type into categories at the end of each search

As an alternative to the three steps just above:

- At load time, identify by text analysis each unique document type in a source record
- Also at load time, sort the documents by type into categories
- Also at load time, load together documents in a category, even if a document must be loaded more than once, in duplicate copies, because the document is categorized into more than one category

Continuing algorithmic support from column 9, lines 13-67:

- If a user corresponds to category #1 (see FIG. 5), then the number of documents responsive to the search query that fall into the categories of "product specifications," "manufacturer supplied descriptions," "product announcements," and "trade show information" are all summarized separately

- if the user corresponds to category #2, then all of the documents responsive to the search query that fall within these categories are lumped together in the category "Product Information" in categories set #2
- for the same query launched by two users corresponding to different categories, yielding the same answer set, summarizing the answer set differently for the two individuals
- determining sets of categories based upon relevant criteria relating to types of users
- determining sets of categories based upon the professional class of the user, legal, business, technical, etc.
- determining sets of categories based upon technical disciplines of technical users, chemical, electrical, mechanical, medical, etc.
- determining sets of categories based upon industry, lumber, medicine, glass manufacturing, etc.
- determining sets of categories based upon geographical location of the user
- determining sets of categories based upon the company for which a user works
- determining sets of categories based upon terminology familiar to a user
- establishing different names for categories with identical content, depending on the terminology familiar to a user
- accepting user-selection which of several sets of categories are to be used by the search system in reporting search results
- accepting user-selection which categories of document types will be utilized in a particular selected category set

Further regarding “means for categorizing,” the specification of the ‘051 patent further discloses at column 10, lines 1-30:

The collections of textual data (i.e., the source records) are typically obtained either in electronic form, or are obtained in hard copy form and then **converted to electronic form**. In either case, **the electronic form is loaded** into the appropriate search engine(s) of the system. During loading, the process to **identify and code information by document type** is typically accomplished by a combination of automated and manual coding. Also, at the time of loading **duplicate documents from multiple sources preferably are identified and removed** so that the results from a search query will not include redundant or duplicate documents. Duplicate documents may be **identified by matching information** associated with a document such as key words in the title, authors, and date of publication. Alternately, **redundant abstracts of a single title may be stored** as unique text segments of a single document.

As indicated above, the sorting process takes query search results and **sorts all relevant document** identified as meeting the search criteria into the predetermined categories of documents that are specific to the category set corresponding to the user **rather than specific to the sources/publishers** of the information (in contrast to existing information retrieval systems such as Dialog, etc.). Sometimes these **categories may have a one-to-one relationship with the document types** (for example, patents may be both a document type and a category) identified in the loading process (described above) or **these categories may be comprised of several document types** (for example, for some users product announcements, product reviews, and product specifications may be grouped into a category labeled "product information").

The algorithmic structure disclosed in this portion of the specification of the ‘051 patent, column 10, lines 1-16, in bullet form, includes at least the following:

- Converting documents to electronic form
- Loading the electronic form of the documents into search engines
- During loading, at least to some extent automatically, identify and code information by document type



- Also at load time, identifying and removing duplicate documents from multiple sources, preventing redundant or duplicate search results
- Identifying duplicate documents by matching information associated with a document such as key words in the title, authors, and date of publication
- As an alternative method or process to the step just above, storing redundant abstracts of a single title as unique text segments of a single document
- Sorting all relevant documents identified as meeting search criteria into predetermined categories of documents that are specific to the category set corresponding to the user
- Refraining from sorting according to categories specific to sources/publishers of the information (in contrast to existing information retrieval systems such as Dialog, etc.)
- Sorting some of the documents into categories having one-to-one relationships with document types
- Sorting some of the documents into multiple categories, for categories that include more than one document type

Again with nothing implied or inferred, all of this algorithmic structure is expressly set forth in the specification of the '051 patent, column 10, lines 1-30. And all of it is clearly linked to means for categorizing including means for generating a summary because this algorithmic structure discloses processing steps of categorizing.

Structure specifically for “means for summarizing” is set forth in the specification at column 10, lines 31-37:

The results of the search and sorting processes are presented to the user **summarized by categories along with the number of documents in each such category**. Unless all duplicates were removed at the time the source records were input to the system, any **duplicate documents**

**retrieved may be removed at this time** by comparing titles, authors, and publication date.

Emphasis added. Here the disclosed algorithmic structure is:

- Removing duplicate documents at the time of generating a summary
- Summarizing by categories along with the number of documents in each such category

The excerpt from column 10, lines 31-37, illustrates the fact that generating a summary of the number of documents across categories or document types is a natural algorithmic component of categorizing. That is, as stated in the claim language itself in claims 1, 10, and 14, and as treated in the specification, means for categorizing includes means for generating a summary of the number of documents responsive to a query.

Further regarding “means for generating a summary,” the specification discloses at column 5, lines 13-23:

When all results are reported (i.e. all columns have indicated they are finished), the **SAS 24 organizes the documents into the above-described categories and in the correct order for display, utilizing a predetermined key** (such as the date of the publication, the publisher, and/or alphabetical priority of the document, etc.) that is generated for each document when it is loaded into the database. **Display of the information to the user is usually in reverse chronological by date published but can be based on any content of the document**, as desired. Once the sorting is complete, search results are presented by category to the user.

Emphasis added. In view of this excerpt, the structure disclosed at column 5, lines 13-23, directly supporting the function of generating a summary according to document type includes at least the following algorithmic structure, steps, or processes:

- Organizing documents into categories
- Organizing documents into order for display

- Organizing documents for display in reverse chronological order
- Organizing documents for display based on content of the document

Again with nothing implied or inferred, all of this algorithmic structure is expressly set forth in the specification of the '051 patent, column 5, lines 13-23. And all of it is clearly linked to means for generating a summary because this algorithmic structure discloses processing steps of summarizing.

Further regarding “means for generating a summary,” the specification discloses at column 4, lines 11-28:

... The SAS system 24 can operate in two very distinct modes.

One mode supports end users that are calling with a simple keyboard/display device such as a Digital Equipment Corporation VT100 terminal (or equivalent terminal). **In this mode the SAS system 24 generates screens of display** and monitors the keyboard responses entered by the user to establish the information sought and **present the search results by category.**

The second mode supports connections from remote computing systems. In this mode the SAS system 24 accepts and executes transactions from a predefined set that allows for a query to be generated, search to be run, and search results presented. In this mode **the remote computing system is in complete control of the end user's display screen and is responsible for the look and feel of the end user activity.** This well-known mode of operation is commonly described as a Client/Server Architecture.

Emphasis added. In view of this excerpt, the structure disclosed at column 4, lines 11-28, directly supporting the function of generating a summary according to document type includes at least the following algorithmic structure, steps, or processes:

- Generating screens for display
- Generating screens for display with search results by category
- Controlling the end user's display screen
- Providing the look and feel of end user activity

Again with nothing implied or inferred, all of this algorithmic structure is expressly set forth in the specification of the '051 patent, column 4, lines 11-28. And all of it is clearly linked to means for generating a summary because this algorithmic structure discloses processing steps of summarizing.

Even further regarding "means for generating a summary," Figure 3 expressly sets forth algorithm for "means for generating a summary" that includes counting the number of responsive documents that fall within various categories of document types and preparing a screen for display with the number of responsive documents falling within various categories of document types. Figure 3 sets forth the count of responsive documents and results screen with 24 results in the category of document type "Experts," 59 results in the category of document type "Patents," over 150 results in the category of document type "Journal Articles," over 150 results in the category of document type "Trade Articles," 11 results in the category of document type "Licensable Technologies," and 25 results in the category of document type "Technical Reports."

In addition regarding structure for "means for summarizing," the specification discloses at column 9, lines 25-40:

**If the user corresponds to category #1 (see FIG. 5), then the number of documents responsive to the search query** that fall into the categories of "product specifications," "manufacturer supplied descriptions," "product announcements," and "trade show information" are all summarized separately. **On the other hand, if the user corresponds to category #2, then all of the documents responsive to the search query that fall within these categories are lumped together** in the category "Product Information" in categories set #2. Thus, the same query launched by two users corresponding to different categories will yield the same answer set, but **the answer set will be summarized differently for the two individuals**, each being tailored to their particular needs. This **customization of the summary of the search results** facilitates review of

the search results, saving time for the user and reporting the results in a manner that is uniquely relevant to him or her.

Emphasis added. Here the disclosed algorithmic structure is:

- Summarizing for user category #1 separately across the categories of "product specifications," "manufacturer supplied descriptions," "product announcements," and "trade show information"
- Summarizing for user category #2 separately in only the category of "Product Information"
- Summarizing differently for users whose category sets include different categories, effectively customizing summaries for users corresponding to different category sets

**B. “means for storing a large domain of data”**

The phrase “means for storing a large domain of data” is disputed as it is found in claims 1, 10, 14, and 22. The phrase occurs in slightly different contexts among the subject claims. In claim 1, 14, and 22, the domain of data is said to be contained in multiple source records, whereas in claim 10, the domain of data is contained in multiple document types. The subject claims are means-plus-function claims, and their construction requires identifying a claimed function as well as corresponding structure in the specification. As shown at bottom page 1 and top page 2 of the Joint Claim Construction Statement, the parties here agree that the identified function in “means for storing a large domain of data” as to claims 1, 14, and 22 is “storing a large domain of data contained in multiple source records, at least some of the source records being comprised of individual documents of multiple document types” and as to claim 10 “storing a large domain of data contained in multiple document types.”

The parties disagree regarding the corresponding structure disclosed in the specification for “means for storing a large domain of data.” As indicated above under Applicable Law, when disclosed structure is a computer or processor programmed according to an algorithm, the corresponding structure is the algorithm. The Defendants contend that a general purpose computer is the only corresponding structure, that the specification fails to include sufficient algorithm for performing the claimed function beyond the language of the claims themselves, and that therefore this term is indefinite, not possible to construe. DMS contends that there is sufficient supportive algorithm disclosed in the specification to support proper construction of “means for storing a large domain of data.”

Regarding the function of storing a large domain of data, the specification of the ‘051 patent discloses at column 4, lines 37-45:

The SAS system 24 includes a display of the search server complex that indicates the number of columns in the complex, each column including a search engine 26, 27, 28, etc., respectively, and, optionally, one or more search clones 26', 26", . . . 26.sup.n ; each of the search clones is, in effect, a **replica of the search engine in that column, redundancy being provided** to permit simultaneous searching (with predictable response times) of the domain of data managed by a particular search column.

Emphasis added. The “redundancy being provided” is redundancy of storage, and providing redundancy of storage by replicating a search engine with a search clone is algorithmic structure for storing a large domain of data. The specification further discloses at column 5, lines 24-27:

The Search Engine Systems (SES) 26, 27, 28, etc., (i.e., the search engines plus the corresponding search clones) **house the documents that make up the domain of information.**

Emphasis added. Housing documents in search engines and search clones is algorithm structure for storing a large domain of data. The specification further discloses at column 8, lines 4-41:

A preferred **inverted file architecture** is illustrated schematically in Fig. 4, and is commercially available from Fulcrum, Ottawa, Canada. In such a system, a dictionary 34 **contains an entry for each searchable term** (word) in the document collection, **with a pointer** to a further information stored in reference file 36. The entries are **ordered alphabetically**.

Data in the reference file is **stored in a compressed format**, and **contains** detailed information on the **exact location** of words within documents 42. This information is used to resolve phrase and proximity requests as well as those for simple word combinations.

The index files (i.e., the dictionary and reference files) are **maintained by an indexing engine** and are used by the search engine to resolve queries. These files are **updated** when the indexing engine is used to **process the batch of documents** which have been modified or added since the last update cycle.

A **catalog 40 contains one entry for each document 42** in a collection. It may be thought of as defining the collection: all those documents 42 and only those documents with entries in the catalog 40 are indexed and are subsequently retrievable. **Each catalog entry is identified by a unique system-assigned identifier** (called a catalog id or CID).

**If a document's text is stored in an operating system file outside of the catalog**, the catalog entry contains physical information such as the operation system file name, the filters used to read the text and the file's last modified date. In this manner, the catalog effects a mapping between catalog id and the operating system filename.

**In addition, the catalog entry for each document may store information which pertains to that document but which is not found in the external operating system file.** This information is stored as an arbitrary number of fields, each of which is separately indexable and searchable. Each field typically contains text. Numeric information, such as dates, may also be stored in catalog fields, permitting numeric range searching.

Emphasis added. The specification further discloses at column 9, lines 13-16:

... when the magazine is loaded into the system, a text analysis process **identifies each unique document type within the magazine with a code** and this code is utilized by the system, in conjunction with the

predetermined sets of categories, to organize search results by document types into categories at the end of each search.

Emphasis added. And the specification also discloses at column 10, lines 1-16:

The collections of textual data (i.e., the source records) are typically obtained either in electronic form, or are obtained in hard copy form and then **converted to electronic form**. In either case, **the electronic form is loaded into the appropriate search engine(s) of the system**. During loading, the process to **identify and code information by document type** is typically accomplished by a combination of automated and manual coding. Also, at the time of loading **duplicate documents from multiple sources preferably are identified and removed** so that the results from a search query will not include redundant or duplicate documents. **Duplicate documents may be identified by** matching information associated with a document such as key words in the title, authors, and date of publication. **Alternately, redundant abstracts of a single title may be stored as unique text segments of a single document**.

Emphasis added. DMS notes that even the so-called ‘manual’ process of type coding is fully electronic and automated, that is, algorithmic, as soon as a keystroke is pressed.

In view of the disclosures excerpted above, therefore, the algorithmic structure described in the specification that performs the function of storing a large domain of data includes at least the following algorithmic structure, steps, or processes:

- obtaining in electronic form documents for storing in a large domain of data
- obtaining in hard copy form and converting to electronic form documents for storing in a large domain of data
- loading the electronic form of the documents into appropriate search engines of a system for storing a large domain of data



- providing redundancy of storage by replicating search engines with search clones, and storing documents that make up the domain of information redundantly on search engines and search clones
- during loading, identifying and coding information by document type, typically by a combination of automated and manual coding
- also during loading, identifying and removing duplicate documents from multiple sources
- identifying duplicate documents by matching information associated with a document such as key words in a title, author, publication date
- storing redundant abstracts of a single title as unique text segments of single document – as an alternative to complete deletion of a duplicate
- storing documents in association with a code that identifies a document type, including identifying document type by a text analysis process – the code later used to organize search results
- storing the large domain of data preferably in an inverted file structure
- storing in a dictionary an entry for each searchable term in the large domain of data, including a pointer to further information stored in a reference file, further including storing the dictionary entries in alphabetical order
- storing in a reference file, in a compressed format, detailed information on the exact location of words within documents in the large domain of data

- maintaining index files (dictionary and reference files) by an indexing engine – by storing (‘updating’) in the indexes new data modified or added since an earlier update cycle
- storing in a catalog one entry for each document in a collection of the large domain of data, including storing in the catalog as part of each entry a unique system-assigned identifier (a catalog id or CID)
- storing in the catalog a file name, reading filters, and last modified date for documents whose contents are stored in operating system files
- storing in the catalog in separately indexable and searchable fields additional information not found in an operating system file, text, dates, and other numeric information supporting numeric range searching

**C. “means for searching”**

The phrase “means for searching” is disputed as it is found in claims 1, 10, 14, and 22. The phrase occurs in slightly different contexts among the subject claims. In claim 1, 14, and 22, the searching function is applied to at least a substantial portion of the data, whereas in claim 10, the search function is applied to at least a portion of the data, without the limitation of “substantial.” The subject claims are agreed to be means-plus-function claims, and their recited functions are agreed as shown on page 2 of the Joint Claim Construction Statement to be “searching at least a [substantial] portion of such data based on a search query to identify documents of multiple types responsive to the query.”

The parties disagree regarding the corresponding structure disclosed in the specification for “means for searching.” As indicated above under Applicable Law, when disclosed structure is a computer or processor programmed according to an algorithm, the corresponding structure is the algorithm. The Defendants contend that a general purpose computer is the only corresponding structure, that the specification fails to include sufficient algorithm for performing the claimed function beyond the language of the claims themselves, and that therefore this term is indefinite, not possible to construe. DMS contends that there is sufficient supportive algorithm disclosed in the specification to support proper construction of “means for searching.”

From the claim language itself it seems clear that the limitation “to identify documents of multiple types responsive to the query” is in effect an algorithmic component of the searching function. Type coding documents therefore is algorithmic structure that is an actual component of searching as described in the specification at least at column 9, lines 13-19:

... when the magazine is loaded into the system, a text analysis process **identifies each unique document type within the magazine with a code** and this code is utilized by the system, in conjunction with the predetermined sets of categories, to organize search results by document types into categories at the end of each search.

Emphasis added. Algorithmic structure for document type coding is also described in the specification at column 10, lines 5-8:

... During loading, the process to **identify and code information by document type** is typically accomplished by a combination of automated and manual coding.

Emphasis added. DMS again notes that even the so-called ‘manual’ process of type coding is fully electronic and automated, that is, algorithmic, as soon as a keystroke is pressed. Regarding a preliminary algorithmic component of the searching function, structuring a Search Administration Server, the specification discloses at column 3, line 65–column 4, line 9:

When an end user is accepted by the access control computer 20 as **a valid user**, the user is then **connected with a Search Administration Server (SAS) 24**. Typically **at least two SAS** systems 24 are used to manage a domain of information (unless a non-stop processing system is used) to insure maximum system availability. **The number** of SAS systems 24 required again **depends on the volume of use** the system handles **and the target response time** in the busiest portion of a day; this can be **determined** using well-known standard queuing models associated with multitasking processes.

Emphasis added. According to the claim language itself, searching is carried out “based on a search query.” That is, query processing is described literally in the claim elements themselves as an algorithmic component of searching. In describing the example illustrated in FIG. 3, the specification describes algorithmic query structure as a component of the searching function, beginning at column 6, line 34-59:

Turning now to FIG. 3, the query generation process preferably includes a **knowledge base** containing a **thesaurus** and a **note pad**, and preferably utilizes **embedded predefined complex Boolean strategies**. Such a system allows the user to enter their description of the information needed using simple words/phrases made up of "natural" language and to rely on **the system to assist in generating the full search query**, which would include, e.g., synonyms and alternate phraseology. Systems of this type are known in the industry including, e.g., Westlaw's "WIN" system (see, e.g., Pritchard-Schoch, Natural Language Comes of Age, Online, pages 33-43, May 1993).

As illustrated in FIG. 3, a user enters a word/phrase describing the technical topic about which knowledge is sought. In the example illustrated in FIG. 3, the term "AIDS" has been entered by the user. **The thesaurus is scanned and a list of technical concepts related to the word/phrase** entered is returned. In this case, the thesaurus has returned concepts such as "acquired immunodeficiency syndrome", "first aid product", "navigational aid", etc. The user reviews the concepts found and saves relevant ones to the note pad (thereby discarding irrelevant possible connotations of the word/phrase entered). For each concept found the user can have the thesaurus show a description of the concept and other concepts that are related to it.

Emphasis added. The specification describes additional algorithmic query structure as a component of the searching function at column 7, lines 19-44:

The **note pad is continually updated** as the user selects additional relevant terms associated with the word/phrase for later use in creating search strategies. Users may enter additional words/phrases associated with the desired topic. Users then create and execute search strategies using one or more concepts saved on the note pad. **The system translates these concepts into complex Boolean search strategies and automatically executes these strategies.**

Referring again to the example shown in FIG. 3, after entering the term "AIDS" the thesaurus presented a variety of possible meanings for this term. If the user selects (by entering the command "SE 1" or an equivalent command) the first meaning presented, i.e., "acquired immune deficiency syndrome" **the system automatically executes an embedded Boolean search strategy** such as "(acquired immunodeficiency syndrome!) or (acquired immune deficiency syndrome!) or ("AIDS" not w/10 hearing! or beauty or retention! or visual! or computer! or diagnostic! or dispersing)." **This complex search strategy includes synonyms for the disease, and excludes concepts with the same spelling but with different meanings such as hearing aids.** The user is not required to know Boolean logic or to anticipate all of the unintended meanings of relevant words utilized in the search strategy, but has been able to launch a relatively sophisticated and accurate search query just by inputting a query in "natural language".

Emphasis added. Further regarding the searching function, the specification of the '051 patent discloses at column 2, lines 55-58:

The search process can utilize any index and search engine techniques including **Boolean, vector, and probabilistic** as long as a substantial portion of the entire domain of archived textual data is searched for each query ...

Emphasis added. The specification further discloses at column 4, lines 37-45:

The SAS system 24 includes a display of the search server complex that indicates the number of columns in the complex, each column including a **search engine** 26, 27, 28, etc., respectively, and, optionally, **one or more search clones** 26', 26'', . . . 26.sup.n; each of the search clones is, in effect, a **replica** of the search engine in that column, redundancy being provided to permit **simultaneous searching** (with predictable response times) of the domain of data managed by a particular search column.

Emphasis added. The specification further discloses at column 7, line 58–column 8, line

21:

Preferably **the search process incorporates search engines designed to utilize the Boolean method of retrieval** for textual data, accompanied by **an inverted file structure that is utilized to speed up retrieval**. Boolean logic search software is readily available for purchase from such companies as InfoPro Technologies, McLean V; Folio, Provo, Utah; and Fulcrum, Ottawa, Canada. Complete descriptions of the Boolean language and accompanying file structures are available from these companies. Each supplier of Boolean software also specifies the file structure of the domain. Most software packages make use of an inverted file structure because it dramatically speeds up retrieval, although such a file structure is not strictly required.

A preferred fully **inverted file architecture** is illustrated schematically in Figure 4, and is commercially available from Fulcrum, Ottawa, Canada. In such a system, a dictionary 34 contains an **entry for each searchable term** (word) in the document collection, with a **pointer to further information** stored in reference file 36. The **entries are ordered alphabetically**.

Data in the reference file 36 is stored in a compressed format, and contains **detailed information on the exact locations** of words within documents 42. This information is used to **resolve phrase and proximity requests as well as those for simple word combinations**.

The **index files (i.e., the dictionary and reference files)** are maintained by an indexing engine and are used by the search engine to resolve queries. These files are updated when the indexing engine is used to process the batch of documents which have been modified or added since the last update cycle.

Emphasis added. In view of the disclosures excerpted above, the algorithmic structure described in the specification that performs the function of searching at least a [substantial] portion of such data based on a search query to identify documents of multiple types responsive to the query includes at least the following algorithmic structure, steps, or processes:

- identifying documents with unique document type codes that “identify documents of multiple types responsive to the query”
- replicating search data across search engines and search engine clones

- structuring the search system with two or more Search Administration Servers, the number of Search Administration Servers determined, by use of queuing models associated with multitasking processes, in dependence upon the volume of use the system handles and the target response time in the busiest portion of a day
- connecting for data communications a user with a search administration server
- generating a search query with a knowledge base containing a thesaurus, a note pad, and embedded predefined complex Boolean strategies
- generating a complex search query based upon a natural language query entered by a user – by use of the knowledge base, thesaurus, note pad, and Boolean strategies
- scanning the thesaurus with a user-entered search word/phrase and returning a list of technical concepts related to the word/phrase
- continually updating the note pad with user-selected relevant terms associated with the word/phrase
- translating concepts saved on the note pad into complex Boolean search strategies and automatically executing these strategies
- including in a complex search strategy synonyms for a search term
- excluding from a complex search strategy concepts with the same spelling but with different meanings from a search term
- resolving simple word combinations in search terms/phrases by use of data in a reference file containing detailed information on the exact locations of words within documents

- resolving phrase and proximity requests in search terms/phrases by use of data in a reference file containing detailed information on the exact locations of words within documents
- resolving queries by use of index files maintained by an indexing engine
- searching simultaneously across instances of search data that is replicated across search engines and search engine clones – effecting predictable response times
- searching with a Boolean search a [substantial] portion of an entire search domain
- searching with a vectorial search a [substantial] portion of an entire search domain
- searching with a probabilistic search a [substantial] portion of an entire search domain
- searching with an inverted file structure that speeds up retrieval
- searching with an inverted file structure with index entries ordered alphabetically
- searching with a binary search using an inverted file structure with index entries ordered alphabetically

**D. “document type”**

The term “document type,” including slight variations in phrasing such as “documents of multiple types” or “multiple document types,” is disputed as it is found in claims 1, 10, 14, 17, 18, and 22. The Defendants contend that “document type” means:

Document classification, where each document falls within only one classification and that classification is independent of the document subject matter, originating source record, or database in which the document was found.

DMS contends:

A document type is a kind of document, not the subject of a document. A news article is a kind of document, a news article. The subject of one news article can be war in the Middle East. The subject of another news article can be the history



of the 17th century. Both articles are documents of the same type, news articles, despite having different subjects.

Document types are not limited to text documents, but can comprise text documents, video clips, graphic images, and so on.

From the literal wording of these proposed constructions, it appears that the parties effectively agree that a document type is a kind of document classification that is independent of the document subject matter. In addition, although it is not apparent from the literal wording of the contending constructions, in fact, DMS agrees with the Defendants' proposed construction that document type is a classification that is independent of originating source record as well as the database in which a document is found.

The only remaining issue in construction of "document type" is whether "each document falls within only one classification," that is, whether a document is limited to a single type. DMS contends that proper claim construction in this case does not limit a document to a single classification or type. There is not one word anywhere in the claims themselves that states, suggests, or even hints at the limitation of only one classification or type for a document. In addition to the fact that the claims as such recite no such limitation, the limitation of a document to only one type is inconsistent with the way that documents are treated in the specification of the '051 patent. Here, for example, is an excerpt from the paragraph beginning at column 9, line 14, emphasis added:

Turning again, then to the trade magazine example, when the magazine is loaded into the system, a text analysis process identifies each unique document type within the magazine with a code and this code is utilized by the system, in conjunction with the predetermined sets of categories, to organize search results by document types into categories at the end of each search. ... If the user corresponds to category #1 (see FIG. 5), then the number of documents responsive to the search query that fall into the categories of "product specifications," "manufacturer supplied descriptions," "product announcements," and "trade show information" are all summarized separately. On the other hand,

if the user corresponds to category #2, then **all of the documents responsive to the search query that fall within these categories are lumped together in the category "Product Information"** in categories set #2. Thus, the same query launched by two users corresponding to different categories will yield the same answer set, but the answer set will be summarized differently for the two individuals, each being tailored to their particular needs. This customization of the summary of the search results facilitates review of the search results, saving time for the user and reporting the results in a manner that is uniquely relevant to him or her.

From this excerpt it is seen that the specification places a same document in different categories, at least in the case of user-oriented sets of categories. That is, in categorizing documents, the specification assigns a document to more than one category depending on circumstances. It is consistent with the way that the specification *categorizes* documents, therefore, to conclude for *typing* documents that the claims ought not be construed to limit a document to a single type.

Neither expert opined regarding the question whether each document falls within only one classification. Dr. Larson offers no construction for this claim term in his expert report. Tipton Cole offered a construction on page 6 of Exhibit 4 of his Declaration, not mentioning the issue of ‘only one classification,’ but otherwise agreeing with DMS’s proposed construction.

#### **E. “at least a portion”**

The term “at least a portion” is disputed as found in claims 10, 17, and 18, each of which recites:

... searching at least a portion of such data based on a search query to identify documents of multiple document types responsive to the query;

The Defendants contend that “at least a portion” means “Substantially the entire domain (not just a single database or a few selected databases).” DMS contends, “At least a portion of

such data means some of the data.” DMS notes that “such data” refers to “a large domain of data” as recited in claims 10, 17, and 18.

The ordinary meaning of “portion,” according to the Online Oxford English Dictionary (as of 4/18/12) (‘OED’), is “An allocation, a share. ... A part of any whole; a section, a division; a proportion, a fraction.” The OED also indicates that “portion” entered the English language with this meaning in the fourteenth century, so that this was its ordinary meaning in 1993 at the time of the present invention. At any rate, there is nothing in the plain meaning of “portion” to indicate that the proper construction of “at least a portion” means substantially an entire domain of data. Properly construed according to the ordinary meaning of the words in the claims, a search of at least a portion of data just means a search of at least some of the data.

The ordinary meaning of “at least a portion” is consistent with the specification of the ‘051 patent. Here is an excerpt from column 6, lines 23-30:

Although the system of the invention is illustrated, and generally described, as always searching substantially all of the data stored in the system, it is possible to effectively utilize the system of the invention on only selected columns of the entire data domain in some circumstances. For example, in some circumstances certain users may have access to private collections of documents that are not available to all users of the domain.

This excerpt shows that, although it is a purpose of embodiments of the present invention to support searching substantially all of the data, it is within the scope of embodiments to search only a portion of the data. Thus the ordinary meaning of the words in the claim as well as the usage in the specification both indicate that searching “at least a portion” of data should be construed to mean, not searching substantially all of a data domain, but searching just some of the data in the domain.

**F. “at least a substantial portion”**

The term “at least a substantial portion” is disputed as found in claims 1, 14, and 22, each of which recites:

means for searching at least a substantial portion of such data based on a search query to identify documents of multiple document types responsive to the query;

The Defendants contend that “at least a substantial portion” means “Substantially the entire domain (not just a single database or a few selected databases) [of such data].” DMS contends, “At least a portion of such data means some of the data.” DMS notes that “such data” refers to “a large domain of data” as recited in claims 1, 14, and 22.

As noted above, the ordinary meaning of “portion” according to OED is “An allocation, a share. ... A part of any whole; a section, a division; a proportion, a fraction.” Also according to the OED, the ordinary meaning of “substantial” is “Of ample or considerable amount, quantity, or dimensions. More recently also in a somewhat weakened sense, esp. ‘fairly large’.” The ordinary meaning of “substantial portion” as applied to a data search domain, therefore, is a part of the whole data domain that is of ample or considerable amount, quantity, or dimensions. The ordinary meaning of “substantial portion” does not require that a substantial portion must be the entire domain of data.

The doctrine of claim differentiation provides another reason to construe “at least a substantial portion” of data to mean an ample or considerable amount of the data rather than all of the data. Claim differentiation presumes that claims have different scopes. *See Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed. Cir., 2006), citing with approval *Versa Corp. v. Ag-Bag Int’l Ltd.*, 392 F.3d 1325, 1330 (Fed.Cir.2004) and *Comark*

*Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998). The claims of the '051 patent recite three scopes of search. Claims 10, 17, and 18 recite searching “at least a portion” of the data. Claims 1, 14, and 22 recite searching “at least a substantial portion” of the data. And claim 21 recites searching “substantially all of the data.” Claim differentiation then presumes that “at least a substantial portion” must have different scope than “substantially all of the data.” The specification of the '051 patent also confirms, in the excerpt quoted above from column 6, lines 23-30, that the scope of “substantially all” is correctly differentiated from searches of less than substantially all of the data in a search domain. For all these reasons, DMS submits that the correct construction of searching “at least a substantial portion” of the data is the ordinary meaning of the phrase: a search of an ample or considerable amount of the data, not limited to a search of the entire domain.

#### **G. “document”**

The term “document” is disputed as found in claims 1, 10, 14, 17, 18, and 22, each of which recites a large domain of data comprised of “multiple document types” or “documents of multiple types.” The Defendants contend that “document” needs no construction. Documents in the claims of the '051 patent, however, are comprised within source records, and the Defendants have taken the position that a source record is a “collection of textual data.” DMS therefore requests a construction of “document” that includes text as well as non-text information, graphics, video, and so on. In particular, DMS requests this construction of “document”:

A work of authorship of a particular type contained in a source record. Documents are not limited to text documents, but can comprise text, video, graphic images, and so on.

Turning to intrinsic evidence, the claims of the '051 patent recite no limitation regarding text, and the specification expressly allows for 'compound documents' containing information other than text:

The large (gigabytes) domain of archived textual data searchable by the system of the invention consists typically of technical, business and other information licensed from database producers, information licensed from publishers, and information created by the owner of the information retrieval system (though, of course, the system may be adapted for use with *any type of information desired*). The information may be presented to the user in various formats, including but not limited to abstracts, excerpts, full text, or *compound documents (i.e., documents that contain both text and graphics)*.

The '051 patent, column 8, lines 47-57 , emphasis added. In addition regarding ordinary meaning to a person of skill in the art, according to the Microsoft Computer Dictionary (Microsoft Press 1991), "document" at the time of the present invention was:

Any self-contained piece of work created with an application program and, if saved on disk, given a unique filename by which it can be retrieved. People generally think of documents as word-processed materials only. To a computer, however, data is nothing more than a collection of characters, so a spreadsheet or a graphic is as much a document as is a letter or report. In the Macintosh environment in particular, a document is any user-created work named and saved as a separate file.

The meaning of "document" according to the OED is:

Something written, inscribed, etc., which furnishes evidence or information upon any subject, as a manuscript, title-deed, tomb-stone, coin, picture, etc.

The OED indicates that this has been the ordinary meaning of "document" since at least early in the eighteenth century. The ordinary meaning of "document" therefore clearly included non-text information when the present invention was made in 1993.

Thus the ordinary meaning of “document” includes non-text information, the claims of the subject patent recite no limitation to text, and the specification discloses embodiments that utilize documents containing any type of information desired, including in particular compound documents containing information other than text. For all these reasons, DMS requests a construction of “document” that allows a document to contain information other than text.

#### **H. “summary of the number of documents responsive to the query”**

The phrase “summary of the number of documents responsive to the query” is disputed as it is found in claims 1, 10, 14, 17, 18, and 22. The phrase occurs in slightly different contexts among the subject claims. In claim 1, 10, 18, and 22, the summary is applied across categories of document types, whereas in claims 14 and 17, the summary is applied across only document types. Viewing the Joint Claim Construction Statement at page 4 shows that the parties are in substantial agreement regarding construction of the application of the summary, that is, whether the summary is applied across document types only or across categories of document types. The issue here apparently is limited to whether proper construction requires the limitation of an identification of *two or more* categories or document types. The Defendants contend that proper construction does require an identification of two or more categories or document types. DMS contends that it does not.

Turning to the intrinsic evidence, the claims themselves recite no limitation requiring identification of two or more categories or document types. Regarding the specification outside the claims, the word “two” occurs only five times in the specification, none of which state, suggest, or even hint at any requirement to identify two or more categories or document types:

“Typically at least two SAS systems 24 are used to manage...”, column 3, line 67–column 4, line 3;

“The SAS system 24 can operate in two very distinct modes.”, column 4, lines 11-12;

“It is possible that a single document collection may need to be indexed by two or more SES units.”, column 5, lines 36-37;

“Thus, the same query launched by two users...will yield the same answer set...”, column 9, lines 33-37; and

“...but the answer set will be summarized differently for the two individuals...”, also column 9, lines 33-37.

The meaning of “summary” since the sixteenth century according to the OED is “A summary account or statement.” Thus the plain meaning of “summary” does not require a summary across two or more categories or types of anything, including categories or types of document responsive to a query.

Regarding the Defendants’ proposed construction requiring that a summary identify two or more document types or categories of document types, the ordinary meaning of “summary” does not indicate such a construction, the actual wording of the claims do not require such a construction, and the claims read in view of the specification do not disclose or suggest such a construction. For all these reasons DMS requests a construction of “summary of document responsive to the query” that does not require the summary to identify two more document types or two or more categories of document types.

## **I. “source record”**

The term “source record” is disputed as it is found in claims 1, 14, 17, 18, and 22. The Defendants contend that “source record” means “A collection of textual data containing documents provided to the system for loading as a unit.”



DMS notes that its construction as proposed in the Joint Claim Construction Statement is that a source record is a work of authorship ... not limited only to textual data. DMS now proposes, however, that the proper construction of “source record” is simply “a collection of data containing documents.” This proposed construction, with only two exceptions, exactly tracks the Defendants’ proposed construction, thereby simplifying the issues of construction before the court. DMS submits that proper construction of “source record” will not read into the claims a limitation requiring textual data nor a limitation requiring “loading as a unit.”

Beginning construction with intrinsic evidence, the specification, beginning at column 8, line 58, indicates:

FIG. 5 illustrates how five typical sources of information (i.e., **source records**) can be sorted into many document types and then subsequently into categories. For example, a **typical trade magazine** may contain several types of information such as editorials, regular columns, feature articles, news, product announcements, and a calendar of events. Thus, the trade magazine (i.e., the **source record**) may be sorted into these various document types, and these document types in turn may be categorized or grouped into categories contained in one or more sets of categories ...

Emphasis added. The “five typical sources of information (i.e., source records)” illustrated in FIG. 5 of the ‘051 patent are Conference Information, Publications, Newspapers, Books, and Online Databases. The “typical trade magazine” as mentioned in the excerpt above patent is an example of a Publication taken as a source record. Typical trade magazines, of course, include not only textual data but graphic images as well.

As mentioned earlier in this paper in the discussion of “document,” the claims of the ‘051 patent, in referring repeatedly to a “source record,” recite no limitation regarding text, and the specification expressly allows for ‘compound documents’ containing information other than text:

The large (gigabytes) domain of archived textual data searchable by the system of the invention consists typically of technical, business and other information licensed from database producers, information licensed from

publishers, and information created by the owner of the information retrieval system (though, of course, the system may be adapted for use with *any type of information desired*). The information may be presented to the user in various formats, including but not limited to abstracts, excerpts, full text, or *compound documents (i.e., documents that contain both text and graphics)*.

The '051 patent, column 8, lines 47-57 , emphasis added. The plain meaning of “source” according to the OED is:

The fact or condition of being preserved as knowledge or information, esp. by being set down in writing; knowledge or information preserved or handed down in this way.

Anything preserving information and constituting a piece of evidence about past events; esp. an account kept in writing or some other permanent form; (also) a document, monument, etc., on which such an account is inscribed. Freq. in pl.: a collection of such accounts, documents, etc.

Regarding “source,” the OED indicates:

A work, etc., supplying information or evidence (esp. of an original or primary character) as to some fact, event, or series of these.

And as examples of compound usages based on that definition, the OED provides:

**source document** *n.*

1920 A. J. Grieve in A. S. Peake Commentary on Bible 725 It has therefore been surmised that the writer has here incorporated an Aramaic (possibly Greek) source-document.

1977 New Yorker 29 Aug. 35/2 Source documents, once put into computer-readable form, tend to become relatively inaccessible, and in some computer systems are even eliminated.

**source material** *n.*

1936 Time 21 Sept. 47/1 For most of their source material the editors relied on second-rate writers.

1955 W. Moore Bring Jubilee xix. 182 It is not easy to see behind source material, to visualize state papers, reports, letters, diaries as written by men.

1978 Early Music Oct. 597/3 The discussion of the music combines a flair for words with great attention to stylistic interactions and the lessons to be learned from study of the source material.

From all this, DMS submits that the ordinary meaning of “source record” bears no limitation regarding “textual data.”

Regarding “loading as a unit,” DMS’s reasoning is similar. The plain meaning of source record from the OED apparently expresses no requirement that a source record be treated in any way as “a unit.” There is nothing contrary in the intrinsic evidence. The claims recite no limitation requiring loading a source record as a unit. And here is the ‘051 patent at column 10, lines 1-16:

The collections of textual data (i.e., the source records) are typically obtained either in electronic form, or are obtained in hard copy form and then converted to electronic form. In either case, the electronic form is loaded into the appropriate search engine(s) of the system. During loading, the process to identify and code information by **document type** is typically accomplished by a combination of automated and manual coding. Also, at the time of **loading duplicate documents from multiple sources** preferably are **identified and removed** so that the results from a search query will not include redundant or duplicate documents. **Duplicate documents** may be identified by matching information associated with a **document** such as key words in the title, authors, and date of publication. Alternately, redundant abstracts of a single title may be stored as unique text segments of a single **document**.

Emphasis added. This excerpt is a description of a process of loading the contents of source records into search engines of a system according to at least one embodiment of the subject invention. The excerpt shows that the level of pertinent data organization with which the loading process operates is documents, that is, the contents of source records rather than the source records themselves. At any rate, there is nothing in column 10 nor anywhere else in the specification stating, suggesting, or hinting for a source record “loading as a unit.” In fact, the specifications description of identifying and removing duplicate documents from multiple sources is an express indication that in fact source records are not loaded as a unit.

For all these reasons, DMS contends that a proper construction of source record will contain no limitation to textual data or loading as a unit. In sum, DMS proposes the following construction for “source record”: A source record is a collection of data containing documents.

#### **J. “presenting”**

The term “presenting,” is disputed as found in claims 17 and 18, which recite respectively, “presenting a summary of the number of documents responsive to the query by type of document” and “presenting a summary of the number of documents responsive to the query which fall within each category in the selected set of categories.” The Defendants contend that proper construction of “presenting” is “displaying on an output device.” DMS contends that “presenting” refers to presenting a summary, which means preparing and causing the depiction of a number of responsive documents.

DMS first notes that in a world in which a large proportion of presentations of summaries (as well as most if not all data communications today) occur in client-server architectures, construing claims 17 and 18 to require direct control of an output device greatly reduces or completely eliminates any possibility of direct infringement of these claims, because an accused infringer operating a (server-side) search engine will rarely if ever own or utilize a client device upon which a presentation of a summary is actually displayed.

Regarding intrinsic evidence, DMS notes that there is no statement, suggestion, or hint in the claim language itself that expresses any requirement of an “output device.” Moreover, although variations on “present,” “presented,” “presenting,” occur several times in the specification, DMS believes that the best explanation of a relationship between presenting or

displaying and an output device is found in the specification of the '051 patent at column 4, lines 11-28:

... The SAS system 24 can operate in two very distinct modes.

One mode supports end users that are calling with a simple keyboard/display device such as a Digital Equipment Corporation VT100 terminal (or equivalent terminal). In this mode the SAS system 24 generates screens of display and monitors the keyboard responses entered by the user to establish the information sought and present the search results by category.

The second mode supports connections from remote computing systems. In this mode the SAS system 24 accepts and executes transactions from a predefined set that allows for a query to be generated, search to be run, and search results presented. In this mode the remote computing system is in complete control of the end user's display screen and is responsible for the look and feel of the end user activity. This well-known mode of operation is commonly described as a Client/Server Architecture.

That is, in a first mode of communications with end users having simple terminals, the SAS system 24 “generates screens of display” to communicate with a user. In a second mode, a Client/Server Architecture, the SAS system 24 allows search results “presented,” although the remote computing system, not the SAS, is in complete control of the end user’s display screen. By construing claims 17 and 18 of the '051 patent so that “presenting” a summary of responsive documents requires “displaying on an output device,” the Defendants apparently attempt to limit the modes of data communications among embodiments of the present application to a single mode in which the server side of a search function has control of a display on an output device. DMS is confident, however, that the vast majority of accused infringing products and processes today and at most pertinent times have operated and continue to operate in Client/Server Architectures. Moreover, it is clearly within the disclosures in the specification of the '051 patent for presentations of summaries of documents responsive to queries to be implemented in Client/Server Architectures, with no required limitation to complete control of display on dumb

terminals. This no doubt is at least one reason that the plain language of the claims themselves refer to presenting a summary rather than displaying on an output device.

In proposing its claim construction of “preparing and causing the depiction of a number of responsive document,” DMS hoped to convey the sense of ‘delivery’ or ‘conveying’ as opposed to direct operation of an output device, as, for example, in preparing and delivering to a user client an HTML document that represents a presentation of a summary, leaving actual control of the display to the client. In conclusion, DMS submits that the limitation of “displaying on an output device” is not found in the plain language of the claims as such, is not required by any ordinary meaning of “presenting,” and is contrary to the clear description of client-server architecture in the specification. For all these reasons, DMS contends that “presenting” in claims 17 and 18 should be construed to refer to presenting a summary, which means preparing and causing the depiction of a number of documents responsive to a query, with no requirement for direct control of any display or output device.

#### **K. “generating an electronically executable query”**

The term “generating an electronically executable query,” is disputed as found in claims 17 and 18. The Defendants contend that proper construction of “generating an electronically executable query” is “user entering search information and system translating into electronically executable query.” DMS contends that “generating an electronically executable query” is properly construed thus:

An electronically executable query is a query, created from search criteria, capable of electronic execution against a database management system, such as, for example, a query expressed in the Structured Query Language or ‘SQL.’ Generating an electronically executable query is not user action.

Looking at the parties' proposed constructions, it would appear that the parties are in substantial agreement regarding the system's translating search information into electronically executable form. The issue here is whether user entry is a required limitation of the construction. DMS contends that it is not, observing that if user action were a required element of claims 17 and 18, the possibility of direct infringement would be substantially reduced or eliminated because it would be rare that a provider of online search products would own or operate the client devices through which users search.

Beginning with the ordinary meaning of the claim language itself, DMS notes that the actual claim language, "generating an electronically executable query," includes no limitation requiring user entry. The claim language itself addresses only the actual generation of the electronic query, an action that is carried out by the system itself, physically impossible for a user to perform. Moreover, the ordinary meaning of the surrounding context in the claim itself is consistent: the storing term is for data "electronically retrievable," the searching term is "electronically searching," the sorting of documents responsive to a search is carried out electronically by the system, requiring no user action.

Dr. Larson offered no opinion regarding construction of this term. Exhibit 4 of Tipton Cole's Declaration, however, indicates that one of ordinary skill in the art would understand the claim term "generating an electronically executable query" as:

A query, generated from user search input, capable of execution against a database management system, e.g., a query expressed in the Structured Query Language or 'SQL.'

Mr. Cole cites in support of his construction the specification of the '051 patent at column 6, lines 38-43:

... Such a system allows the user to enter their description of the information needed using simple words/phrases made up of "natural" language and to rely on the system to assist in generating the full search query...

Although based on user entry of search information, this excerpt clearly describes the system as generating the full search query, that is, the electronically executable query. DMS notes also the description in the specification of the following generation of a Boolean query, from column 7, lines 27-44:

Referring again to the example shown in FIG. 3, after entering the term "AIDS" the thesaurus presented a variety of possible meanings for this term. If the user selects (by entering the command "SE 1" or an equivalent command) the first meaning presented, i.e., "acquired immune deficiency syndrome" the system automatically executes an embedded Boolean search strategy such as "(acquired immunodeficiency syndrome!) or (acquired immune deficiency syndrome!) or ("AIDS" not w/10 hearing! or beauty or retention! or visual! or computer! or diagnostic! or dispersing)." This complex search strategy includes synonyms for the disease, and excludes concepts wit the same spelling but with different meanings such as hearing aids. **The user is not required to know Boolean logic or to anticipate all of the unintended meanings of relevant words utilized in the search strategy**, but has been able to launch a relatively sophisticated and accurate search query just by inputting a query in "natural language".

Emphasis added – to point out that the specification draws a clear distinction between user entry of search information and the system's generating of an electronic query. It is the system that constructs the electronic query, not the user. For all these reasons, DMS requests a construction of "generating an electronically executable query" that requires no user action in the generating of an electronically executable query.

## VI. CONCLUSION

For the reasons discussed above, DMS requests that the Court construe the foregoing disputed claim terms as it has proposed.

Respectfully submitted,

Date: April 26, 2012

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**CERTIFICATE OF SERVICE**

The undersigned certifies that on April 26, 2012, the foregoing document was filed electronically in compliance with Local Rule CV-5(a). The document was served on all counsel of record who are deemed to have consented to electronic service. Local Rule CV-5(b)(1). Pursuant to Federal Rule of Civil Procedure 5(d) and Local Rule CV-5, all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of this pleading by first class mail.

Respectfully submitted,

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